

AMENDMENTS TO THE SPECIFICATION

Please amend the following paragraphs of the specification as follows:

The paragraph beginning on page 6, line 20:

Thus, the received data is correlated with itself delayed for the period of sync pattern. And the correlation value  $R(i)$  is accumulated during the period of correlation window. The maximum value of the absolute value ( $|R(i)|$ ) of the correlation value  $R(i)$ , that is the output of the subtracter 86 is detected by the maximum value detection circuit (not shown in Fig. 3).

The paragraph beginning on page 7, line 12:

Furthermore, the determination whether the current symbol is the reference symbol or not is conducted based on the predetermined threshold value. More specifically, the maximum value of the absolute value  $|R(i)|$  while the absolute value  $|R(i)|$  of the correlation value  $R(i)$  exceeds its threshold value is taken as the detection of reference symbol and the synchronization timing.

The paragraph bridging pages 9 and 10:

In this connection, in IEEE802.11a, the reference symbol is formed as shown in Fig. 4, and the reference symbol shows the waveform as shown in Fig. 5. Moreover, in the BRAN for BCH, the reference symbol is formed as shown in Fig. 6, and the reference symbol shows the waveform as shown in Fig. 7. Furthermore, in the BRAN for UL, the reference symbol is formed as shown in Fig. 8, and the reference symbol shows the waveform as shown in Fig. 9. And in the high speed wireless access system (HISWAN) for UL, the reference symbol is formed as shown in Fig. 10, and the reference symbol shows the waveform as shown in Fig. 11.

The paragraph beginning on page 10, line 18:

At this point, the amplitude of correlator output (the top stage) takes the value from 0 to 1. The plain 1 value continues and the shape having sharp peaks appears. However, these waveforms differ slightly from each other. The amplitudes of the real part and the imaginary part are shown in the middle stage and the lower stage. The real part takes the value from +1 to -1, and according to the combination of codes at the peak position of the top stage, the difference of preamble occurs as shown in Fig. 15.

The paragraph bridging pages 10 and 11:

However, although it is difficult to differentiate between the IEEE802.11a and the UL of BRAN, the distinction between the IEEE802.11a and the BCH of BRAN is possible, and it is considered that this causes no problem. The imaginary part takes the value of 0. If the frequency difference occurs, the imaginary part gets the value, and thus, the frequency difference trap will be conducted to make this value ~~to~~ 0 as described in the Japanese Patent Application No. 10-330208 (Japan Patent Laid-Open No. 11-215097 bulletin).

The paragraph beginning on page 11, line 8:

Next, a flow of the general synchronizing operation and the OFDM demodulation operation will be shown in Fig. 16. In Fig. 16, firstly, the existence of signal will be detected by detecting the reference symbol. This is not only the detection of signal existence by detecting the electric power of the received signal, but also, by detecting the signal waveform pattern specific to the digital communication system, we can know that the signal is the communicating party of our digital communication system. Then, after the detection of reference symbol is being conducted, the

data demodulation will be conducted according to the OFDM system.

The paragraph beginning on page 11, line 18:

In the conventional digital communication system of the OFDM system, there are two ~~problem~~ problems and these will be described in the following paragraphs.

The paragraph bridging pages 13 and 14:

Accordingly, in the digital communication system, it is desired to have the new reference symbols having completely different structures that can be detected distinguishing them from each other and having the length of the integral multiple of 3.6 microsecond.

The paragraph beginning at page 23, line 1:

As shown in Fig. 27, the sync pattern phase-shift circuit 40 is equipped with a symbol counter ~~341~~ 41, a phase-shifter 42, and a selector circuit 43. The symbol counter 41 detects the position of the predetermined sync pattern of the reference symbol and supplies this to the selector circuit 43.

The paragraph beginning at page 23, line 12:

The cyclic expansion insertion circuit 14, inserting the reference symbol to the transmission data, supplies this to the in-phase/quadrature-phase (IQ) modulator 15. The IQ modulator 15, after converting the complex transmission data in which reference symbol is inserted to the real number transmission data (I series data and Q series data), quadrature-phase modulating the carrier wave using these data, forms a radio frequency (hereinafter referred to as RF) signal and supplies this to the TX (transmission) filter 16.

The paragraph beginning on page 31, line 14:

Moreover, since the reference symbols will be generated by using the series A, series B and the series C to be obtained by the IFFT, the digital communication system can be ~~identifies~~ identified by using the same correlation circuit as the conventional digital communication system. In addition to this, since the common circuit can be used when forming the shared device of the IEEE802.11a and the wireless home link by using the same LSI, this is very convenient. And also the unit price reduction due to the cost curtailment of the terminal parts and the effects of mass production of LSI can be expected.